Chandler • Arizona
Where Values Make The Difference

Civil Engineering Preliminary Technical Site Review Checklist

Log No:_____

Date:_____

Project:		
Location:		
Reviewed by:		Phone #

The purpose of the preliminary review process is to provide a simple listing of City engineering requirements for proposed projects. Please do not treat this review as a complete list of requirements; it is merely the civil engineering initial review and assessment.

The reviewer has circled the items applicable to this project and, where necessary, has provided additional comments. Any item determined not applicable, based on this conceptual review, is shown with a strikethrough across the item number. If you have any questions, please contact the reviewer noted above.

Contact Public Works General Services at 480-782-3336 for information regarding system development fees, impact fees, impact fee credits and water meter fees. The City determines all fees based on accurate information provided by the developer's consultants.

The initial plan review submittal must be a complete package. Contact the front counter staff or your Project Development Administrator for submittal requirements. The Plan Review Submittal Checklist is required for all submittals. A complete submittal could reduce the number of plan review re-submittals.

The following documents describe the specific City of Chandler requirements:

Zoning Code

Standard Details and Specifications
Technical Design Manuals 1 & 2 - Water & Wastewater System Design
Technical Design Manual 3 - Drainage Policies and Standards
Technical Design Manual 4 - Street Design and Access Control
Technical Design Manual 5 - Traffic Signal Design
Technical Design Manual 6 - Streetlight Design
Technical Design Manual 7 - Traffic Barricade Design
Technical Design Manual 8 - Landscape and Irrigation Design, Right-of-Way/Retention Basins/Parks
Fire Department Plan Review Guides and Standard Details
Stormwater Quality Protection Manual

Civil Plan Review Fees

Submit the plan review fee with the initial plan set.

Civil plan review fees are based upon the number of sheets submitted for review and approval. Each type of improvement plan (i.e. grading and drainage, water, sewer, right-of-way improvement) may be submitted separately or in combination. Fees are as follows:

Improvement plans (including grading and drainage):	$440 per sheet
Fourth and subsequent review fees:	$150 per sheet
Plan revisions initiated by the developer or required due to an error or oversight of the developer after plans have been approved by the City Engineer	$110 for each revision or set of revisions reviewed

Buy-In Fees

Buy-in fees must be paid prior to formal plan approval. The actual buy-in assessments will be calculated during the formal plan review process.

Type	Location	Size	Length	Unit Cost	Cost

Costs are subject to the fees in effect at the time of plan approval

Check if Required	Description	Comments
_____	1. Submit the civil engineering plans on 24" x 36" size sheets. The minimum height of all text must be 0.1" (one tenth of one inch). Prior plan comments are required to be submitted with each subsequent review.	
_____	2. An ADOT or MCDOT permit is required for a portion of the required improvements prior to plan approval. Sound wall study and sound walls may be required	
_____	3. The development is adjacent to a current City project/improvement district. Coordinate your plans with the City Project/Improvement District Engineer noted below: _____	
_____	4. The development is within an Airport Impact Overlay District. Submit an avigation easement form for the following airport prior to plan approval: A. Stellar Airpark. B. Chandler Municipal Airport.	
_____	5. The developer must obtain approval from FAA, per *FAA Regulation, Part 77, Notice to Construct*. The City must receive a copy of the written approval from the FAA prior to plan approval. A bird mitigation study may be required if lakes are a part of the development.	
_____	6. A portion of the proposed development appears to be located within the FEMA 100-year flood zone. Flood Control District of Maricopa County approval is required prior to plan approval. This approval normally requires a long lead-time and may have a significant impact upon the development of the site.	
_____	7. Provide a separate Erosion and Sediment Control Plan. Refer to City's Stormwater Quality Protection Manual for additional information.	

Check if Required	Description	Comments
_____	8. Grading plans are required, consisting of a complete grading and drainage plan with retention facilities. A registered civil engineer must seal the plans. Provide a separate drainage report including all hydrologic, hydraulic, and retention calculations in accordance with Technical Design Manual 3 - Drainage Policies and Standards.	
_____	9. The following items will affect the retention basin grading on the site:	
	A. All retention areas must comply with the aesthetic standards given within the City Zoning Code. Retention volumes must accommodate mounding adjacent to retention ponds. There are no exceptions to standards given within the City Zoning Code.	
	B. Amount of retention area allowed along the street frontage per the Zoning Code.	
	C. Accommodate ½ street runoff and onsite retention plus 10%, retained entirely on private property.	
	D. Maximum allowable depth of retention is 3 ft. for the 2-hour 100-year storm and 10%.	
	E. Maximum side slopes are 4:1. Access to the bottom must be provided for maintenance vehicles not to exceed 10:1.	
	F. Certified double-ring infiltrometer testing is required in the locations of each proposed basin. Basin drain shall be less than 36 hours based on 50% of percolation test rate.	
	G. Water lines, water service lines, and fire protection lines may not cross under retention basins. This does not apply to paved areas used for retention or landscape irrigation lines downstream of the backflow prevention device. A concrete cap must protect sewer lines passing under retention basins.	

Check if Required	Description	Comments
_____	10. Elevations noted on the plans shall be based upon the NAVD 1988 datum. The nearest City CMCN benchmark shall be utilized with the proper conversion value to NAVD 88. The City's benchmark ID number (CMCN #) and verbatim description must match the latest edition of *City of Chandler Vertical Control Base List*, and must be shown on the cover sheet with the equation.	
_____	11. The standard City General Notes and the applicable Standard Construction Notes are required on plan sets.	
_____	12. Register all proposed drywells with the Arizona Department of Environmental Quality (ADEQ). The following requirements also apply: A. All installations must conform to the City drywell Standard Detail No C-501. B. For any project involving hazardous materials (including fuels) that require a drywell, the drywell must include the "ENVIBRO" drainage system or equal per City Standard Detail No. C-502.	
_____	13. Show all existing water wells and their Arizona Department of Water Resources registration numbers on the plans. If not registered, so note on the plans. Wells must be registered prior to disposition and documentation provided to the City. Wells are to be abandoned per A.D.W.R. "Standard Method". Contact the Municipal Utilities Department staff member noted below to coordinate well registration and disposition. _____	
_____	14. All public improvement plans must be a separate improvement plan set with a separate cover sheet. All private improvements may be included with the grading and drainage plans. Street, sewer, storm drain and reclaimed water lines shall be plan and profile design.	

Check if Required	Description	Comments
_____	15. The following improvements are required for existing streets and alleys adjacent to the development in accordance with *Technical Design Manual 4 - Street Design and Access Control.* A. Sidewalk installation. B. Additional pavement with curbing. C. Arterial street medians must be constructed. D. Alley must be paved. E. Deceleration lane. F. Half street improvements with a minimum of 24 feet of pavement width of drivable surface is required for collector and local streets.	
_____	16. When the development involves widening of existing street paving, cross-sections to scale at a maximum 50-ft. intervals are required to insure provision of an adequate and uniform street cross-section.	
_____	17. The following improvements to proposed streets and alleys adjacent to the development are required in accordance with *Technical Design Manual 4 - Street Design and Access Control*: A. A half street improvement with a minimum of 24' pavement width of drivable surface is required for collector and local streets. B. Full street improvements. C. Alley improvements. D. Deceleration lane. E. Bus bay.	
_____	18. When arterial impact fees are paid in lieu of constructing the street improvements, 60% ± complete plans of the arterial street are required. The plans must include design for ¼ mile in both directions from site. The plans must be separate from any other design and be provided to the City on 4-mil mylar at the time of plan approval.	

Check if Required	Description	Comments
_____	19. When arterial street improvements will be constructed by the developer, submit for approval full improvement plans including the frontage of the site, all required transitions and tapers as well as 60% ± design for ¼ mile in each direction.	
_____	20. A performance bond and liability insurance will be required for the permitted construction work (refer to the Offsite Construction Estimate for Civil Performance Bond Calculations). The City will determine the bond amount from the quantities listed in the Offsite Construction Estimate to be provided by the project engineer. The bonding is to cover work within the public right-of-way only.	
_____	21. Permit fees are based on the signed and sealed Certificate of Quantities form, which covers onsite and offsite work. Street cut permit fees for utility connections are based on the age of pavement being cut; a street bore or alternate connection is preferred.	
_____	22. Draw to scale all required sections and typical sections. Show how the development grades blend with the surrounding properties.	
_____	23. The existing irrigation facilities must be undergrounded. Replace all existing CIPP irrigation lines with RGRCP. Contact SRP for design information and coordination.	
_____	24. Relocate the existing irrigation facilities out of the public right-of-way.	

Check if Required	Description	Comments
_____	25. Creation of the boundaries of this site results in a land division in accordance with the definition of a subdivision. The following subdivision requirements apply: A. A preliminary plat is required and must obtain technical review and approval before formal submittal of the site improvement plans. Refer to the Preliminary Plat Review Checklist for technical content requirements. Contact planning staff for planning requirements. Council approval does not convey technical engineering review approval of the preliminary plat. B. Include the final plat with the first civil plan submittal. C. An amended plat or re-plat is required to be processed with the engineering plans. D. Provide a current title report, with a copy of all schedule "B" items (6 months old maximum). **NOTE: Building permits will not be granted until a required final plat is recorded. Phasing of plats is not allowed.**	
_____	26. Right-of-way or easement is required for: A. Existing streets or alleys. B. Proposed streets or alleys. C. Deceleration lane/s on existing streets. D. Deceleration lane/s on proposed streets. E. Water meter and/or fire hydrant. F. Public water line. G. Public sewer line. H. Private easements. I. Other.	

Check if Required	Description	Comments
_____	27. Use the City's form for any easement dedications. Minimum requirements for easements are as follows: A. Properly executed (notarized but not recorded) document(s). B. Subdivision/project name. C. Copy of proposed or existing plat. D. Type of conveyance, easement or right-of-way required. E. Reason or purpose of the conveyance. F. Location and vicinity map showing major cross streets. G. Legal description with registered land surveyor certification. H. Exhibit with legal description showing the conveyance(s) with the MCR information and tract or dimensions, bearings, with tie to monument, true point of beginning, section, township and range. I. Plan sheet for project showing relationship to City property or right-of-way. J. Current title report, not more than six months old specific to the parcels upon which the proposed conveyance is located. K. Signature authority documentation indicating individual authorized to execute conveyance, e.g. partnership agreement, corporate resolution. L. For utility projects, prior rights documents and plans indicating location of existing facilities. M. Environmental approval, for fee dedications only. N. Executed in black ink.	

Check if Required	Description	Comments
_____	28. A minor land division plat is required in order to create less than four lots or change lot lines. The following requirements apply: A. Current standard owners policy preliminary title report (no older than 6 months). B. ALTA survey. NOTE: Under certain conditions the City Engineer may allow dedication by warranty deed in which case all requirements under item 27 would apply.	
_____	29. An environmental site assessment in compliance with *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Report* per A.S.T.M. E-1527, latest update, is required for any land being dedicated to the City.	
_____	30. Streetlights are required on all streets adjacent to the development. Refer to *Technical Design Manual 6 - Streetlight Design* - for design requirements. Some general requirements are noted below: A. Spacing, 180 to 200 ft. B. Luminaire size. 1) Local streets – 9,500 Lumen. 2) Collectors – 16,000 Lumen. 3) Arterials – 30,000 Lumen. C. Luminaire mounting height. D. City Standard Detail Number for type of pole (SL1 for most installations, SL10 for City Center area, SL 16 for decorative poles on local or collector streets, or SL 17 where necessary along arterial streets for clearance from overhead power lines). Design must be in conformance with Appendix A/B of the Streetlight Standards. New installations are to be consistent with the existing lights wherever possible. E. Must be installed at least 2.5 feet from the back of curb and 1 foot from sidewalks. Refer to *Technical Design Manual 4 - Street Design and Access Control* for approved locations.	

Check if Required	Description	Comments
_____	31. The following requirements apply to the proposed driveway installation. Refer to Figure 12 of *Technical Design Manual 4 - Street Design and Access Control* for more information: A. Deceleration lanes must be constructed. Taper length is minimum 100 ft. Holding bay length is 100 ft. minimum. Refer to City of Chandler Standard Detail C-231. B. Must be aligned with any existing driveways on the opposite side of the street or offset at least 100 feet from opposing driveways. C. Arterial streets: Full movements on arterials with medians are allowed only at ½ mile and ¼ mile points. Full movement at ⅛ mi. points may be allowed. This applies to street intersections as well. D. Non-arterial streets: Must not be within 150 ft. of a non-arterial intersection measured from the right-of-way line. E. Construct drive entrance per MAG Standard Detail 251 with modified larger turning radius. Refer to Table 7 of *Technical Design Manual No. 4 – Street Design and Access Control* for width and radius requirements. Use MAG Standard Detail 231 Type A ramps.	
_____	32. Bus bays must be constructed. All bus bays must have prior written approval by the City Transportation Engineer and must be consistent with the City's Transit Plan. The geometrics are dependent upon whether or not a combined bus bay/deceleration lane will be constructed. Refer to City of Chandler Standard Details No. C-230 and C-231. An additional 5' x 30' bus shelter easement is required to be dedicated to the City of Chandler.	

Check if Required	Description	Comments
_____	33. The following water and sewer main improvements are required for the development. Refer to the *Technical Design Manual 1 & 2 - Water & Wastewater System Design*: A. Installation of a public water main within the street right-of-way. B. Installation of a public reclaimed water main within the arterial street right-of-way. C. Installation of a public sewer main within the street right-of-way. D. On-site water and sewer mains must be private. E. Infrastructure study. F. Public improvements are eligible for reimbursement.	
_____	34. Show the water meter and service line on the civil plans. Substantial savings may be realized on installation and monthly billing costs by installing separate meters for landscaping and domestic use.	
_____	35. City utilities that are installed along undeveloped property frontages may be eligible for a buy-back agreement. The developer must apply to be eligible. Contact the Development Services Division staff member noted below to obtain further information. _____	
_____	36. Backflow prevention devices are required on the potable water services.	
_____	37. The locations of existing fire hydrants adjacent to the development will affect the number of additional hydrants required to serve the site. A public hydrant is required on the same side of the drive and within 150 ft. of the fire department connection (FDC) installed at the entrance. Private onsite hydrants shall be installed at 300' intervals throughout the development.	

Check if Required	Description	Comments
_____	38. Fire service is to be a double detector check valve assembly in accordance with FD102 or FD103. Fire service with onsite hydrants and multiple buildings will be a looped system with double detector check valves and remote fire department connections (FDC's) per FD103 and located 6' to 10' from the curb at 2 separate entry driveways. All FDC's at the entry shall be within 150' of a public fire hydrant. Private hydrants on a fire service line are not to be within 200' of an FDC. Use post indicator valves (PIV's) for sectional control and riser control valves for each building service line. No underground valves are permitted. For multi-family buildings, the fire hydrant line is to be looped with double check detector check valves at each end and the building fire service will be from the domestic service line. The FDC's for multi-family shall be 1-1/2 inch female swivel connections located on the building under the audio/visual (horn/strobe) device for the building. The FDC shall have a minimum 3-foot unobstructed clearance around and in front of the device, in accordance with Chandler Fire Department standards. The FDC shall be installed so the top of the FDC is 36 inches from finished grade. The sprinkler service, and FDC for club houses, sales offices, maintenance buildings, ramadas and pool equipment buildings shall be installed with a swing check backflow per FD103 from the water line. Refer to the *Chandler Fire Department Plan Review Guides and Standard Details* for the underground fireline checklist and the site plan checklist.	
_____	39. Show the sewer service line on the civil plans. In some cases, the sewer main that is tied into it will control the buy-in fees noted above. Industrial uses will require the installation of an industrial waste sampling manhole at the property line. Refer to *Technical Design Manuals 1 & 2 - Water & Wastewater System Design* for details. During the plan review process, complete and return the Wastewater Discharge Questionnaire	

Check if Required	Description	Comments
_____	40. Provide a master utility plan to scale on one sheet showing all water, sewer and storm drain lines, sizes, valves and hydrants to facilitate verification of spacing and locations of conflicts.	
_____	41. The development is located in a City reclaimed water service area. A Reclaimed Water Application and Agreement must be on file prior to plat and plan approval.	
_____	42. Include the proposed reclaimed water turn-out on the improvement plans.	
_____	43. The overhead utility lines less than 69 KV on or adjacent to this site must be undergrounded.	
_____	44. The existing overhead utility power poles must be relocated 2' inside the public right-of-way line.	
_____	45. Please add the following note to the cover sheet: **The improvements shown on this set of plans will not be fully approved by the City and the Certificate of Occupancy will not be issued until the overhead utility line undergrounding and/or power pole relocation requirement has been satisfied.** NOTE: A waiver may be requested for redevelopment and/or infill projects.	
_____	46. The refuse container locations and quantities must meet the following requirements: A. Refuse truck route turning radii are: 26 ft. internal and 42 ft. external. B. Excessive backing of refuse trucks, typically 50 ft., is prohibited. C. Commercial/industrial refuse container quantities are not regulated.	

Check if Required	Description	Comments
_____	47. The following requirements apply to proposed phasing: A. Construct all rough grading within Phase I. B. Construct all offsite improvements within Phase I. C. Maintain adequate access to all sections of the development at all times. D. Install sufficient refuse containers to service each individual phase. Maintain access to the containers at all times.	
_____	48. The arterial street median landscaping adjacent to this site shall be designed or upgraded with this project. Include the new or upgraded design with the first submittal of civil construction plans. Contact the Public Works Department staff member noted below for minimum design standards. _____ ___	
_____	49. Refer to the latest City of Chandler checklists, standards, specifications and design manuals for more detailed requirements.	

Requirements, forms and information may be found in the City's Unified Development Manual at http://udm.chandleraz.gov